

Amendments to Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (Previously Presented) A device for non-contacting measurement of a length of an object to be measured, in particular a non-abraded length of a sliding contact brush, comprising:

- a pump for producing a variable pneumatic pressure;
- a pressurized air line connecting the pump to a nozzle provided in the vicinity of the object to be measured, so that pressurized air from the pump flows through the pressurized air line and the nozzle onto the object to be measured;
- at least one pressure sensor or flow sensor for determining changes of pressure or flow in the pressurized air line; and
- a measuring amplifier or an evaluation circuit connected to the pressure sensor or flow sensor for evaluating signals from the pressure sensor or flow sensor, by means of which amplitudes of fluctuations of measured air pressure and preferably a difference between maximum and minimum air pressure are evaluated.

2. (Currently Amended) A method for non-contacting measurement of the lengths of a sliding contact brush, comprising the steps of:

- producing pressurized air having a fluctuating air pressure by means of a pump;
- supplying pressurized air having the fluctuating air pressure via a 30 pressurized air line and a nozzle to said sliding contact brush;
- evaluating fluctuations of the fluctuating air pressure by means of a pressure sensor;
- processing signals from the pressure sensor by means of an amplifier or evaluation circuit, taking account of pressure fluctuations; and
- reading out measurement results of the pressure fluctuations.

3. (Currently Amended) A device for determining the length of at least one contact brush in a sliding contact track system, comprising:

- a source of pressurized gas;
- means for supplying pressurized gas from the source to the at least one contact brush;
- at least one pneumatic sensor mechanically connected to the at least one brush;
- means for supplying the pneumatic sensor with pressurized gas from the source of pressurized gas; and
- an evaluation unit for evaluating signals from the pneumatic sensor indicating a pressure drop of the pressurized gas, the pressure drop representing a measure of a length of the brush, and
- wherein at least one pneumatic sensor is connected via levers and rod linkages to the brush to be monitored.

4. (Canceled)

5. (Currently Amended) A device according to claim 31, wherein at least one pneumatic sensor-nozzle is incorporated in a sliding contact brush holder adapted to receive the brush.

6. (Currently Amended) A device according to claim 51, wherein at least one pneumatic sensor-nozzle comprises at least one flow passage extending parallel to a the brush, a length and or cross-section of the flow passage being changed according to a position of the brush.

7. - 8. (Canceled)

9. (Currently Amended) A device according to claim 31, wherein a plurality of pneumatic sensors-nozzles are connected to a pressure source said pump by means of a manifold.

10. (Currently Amended) A device according to claim 9, wherein the manifold has a switching function for selective supply of pressure to particular pneumatic sensors nozzles.

11. (Canceled)

12. (Currently Amended) A device according to claim 3, A device for determining the length of at least one contact brush in a sliding contact track system, comprising:

= a source of pressurized gas;

= means for supplying pressurized gas from the source to the at least one contact brush;

= at least one pneumatic sensor mechanically connected to the at least one brush;

= means for supplying the pneumatic sensor with pressurized gas from the source of pressurized gas;

= an evaluation unit for evaluating signals from the pneumatic sensor indicating a pressure drop of the pressurized gas, the pressure drop representing a measure of a length of the brush; and

= wherein the pressure source is designed to emit pressure pulses.

13. (Currently Amended) A device according to claim 3, A device for determining the length of at least one contact brush in a sliding contact track system, comprising:

= a source of pressurized gas;

= means for supplying pressurized gas from the source to the at least one contact brush;

= at least one pneumatic sensor mechanically connected to the at least one brush;

= means for supplying the pneumatic sensor with pressurized gas from the source of pressurized gas;

— an evaluation unit for evaluating signals from the pneumatic sensor indicating a pressure drop of the pressurized gas, the pressure drop representing a measure of a length of the brush; and

— wherein the entire pneumatic system is adapted to be purged with gas under increased pressure.

14. (Currently Amended) A device according to claim 3, A device for determining the length of at least one contact brush in a sliding contact track system, comprising:

— a source of pressurized gas;

— means for supplying pressurized gas from the source to the at least one contact brush;

— at least one pneumatic sensor mechanically connected to the at least one brush;

— means for supplying the pneumatic sensor with pressurized gas from the source of pressurized gas;

— an evaluation unit for evaluating signals from the pneumatic sensor indicating a pressure drop of the pressurized gas, the pressure drop representing a measure of a length of the brush; and

— wherein a mechanism is provided for adjusting an entire height of a brush block comprising a plurality of brushes according to signals of pneumatic sensors.

15. (Canceled)

16. (Previously Presented) A device for non-contacting measurement of a length of an object to be measured, in particular a non-abraded length of a sliding contact brush, comprising:

— a pump for producing a variable pneumatic pressure;

— a pressurized air line connecting the pump to a nozzle provided in the vicinity of the object to be measured, so that pressurized air from the pump flows through the pressurized air line and the nozzle onto the object to be measured;

- at least one pressure sensor or flow sensor for determining changes of pressure or flow in the pressurized air line; and
- a measuring amplifier or an evaluation circuit connected to the pressure sensor or flow sensor for evaluating signals from the pressure sensor or flow sensor, by means of which amplitudes of fluctuations of measured air pressure are evaluated.

17. (Previously Presented) A device for non-contacting measurement of a length of an object to be measured, in particular a non-abraded length of a sliding contact brush, comprising:

- a pump for producing a variable pneumatic pressure;
- a pressurized air line connecting the pump to a nozzle provided in the vicinity of the object to be measured, so that pressurized air from the pump flows through the pressurized air line and the nozzle onto the object to be measured;
- at least one pressure sensor or flow sensor for determining changes of pressure or flow in the pressurized air line; and
- a measuring amplifier or an evaluation circuit connected to the pressure sensor or flow sensor for evaluating signals from the pressure sensor or flow sensor, by means of which a difference between maximum and minimum air pressure is evaluated.

18. (New) A device according to claim 1, wherein a mechanism is provided for adjusting an entire height of a brush block comprising a plurality of brushes according to signals of pneumatic sensors